

# EPILOX EPOXY BINDER

## Multi-purpose High Performance Epoxy Binder System

### DESCRIPTION

Aftek Epilox Epoxy Binder is a two part solvent free epoxy resin binder system for combining with selected fillers and aggregate to produce epoxy mortars of various consistencies.

Ideal for: bonding, sealing, priming, coating and grouting. May be used on vertical or horizontal applications as structural epoxy adhesive paste and filler. Epilox Epoxy Binder is also used as a primer for Epilox floor coatings and toppings as well as Epilox mortars.

### RECOMMENDED USES

- Suitable for use on damp substrates
- Preparing high strength mortar for repair of damaged concrete or masonry in vertical or horizontal surfaces
- Grouting starter bars, load bearing bolts and base plate supports in concrete
- Sealing of cracks in concrete
- Filling of voids in spalled concrete to restore to original condition with enhanced strength performance
- As a repair mortar where high chemical and abrasion resistance is required
- Patching large sections where high strengths are required
- May be used in flowable consistency or trowellable consistency to cater for any repair shape or size
- Can be used for external applications
- High adhesive bond strength to concrete
- Structural bonding new to old concrete
- Structural repair to spalled concrete
- As a primer for Epilox floor coatings
- Addition of Epilox Fillers to produce Epoxy mortars and grouts

### FEATURES AND BENEFITS

- 100% solids epoxy
- Solvent free
- Low VOC
- High tensile and compressive strength
- Bonds to damp concrete
- High mechanical strength
- Excellent adhesion to most substrates
- Cures at temperature down to 5°C
- High chemical resistance
- Unfilled system
- Allows for mortars and grouts to be mixed to any desirable consistency
- Typically 3-4 times stronger than typical concrete
- Australian Made
- Convenient mix ratio-  
(2 parts Resin- 1 part Hardener)

### APPLICATION INSTRUCTIONS

#### Surface Preparation-

Clean the surface and remove any dust, unsound material, plaster, oil, paint, grease, corrosion deposits or algae. Roughen the surface and remove any laitance and expose aggregate by light scabbling or grit-blasting.

All anchor bolt holes must be free of water and debris prior to placing of Aftek Epilox Epoxy Binder. Steel surfaces such as reinforcement bars should be grit-blasted or scabbled to remove any corrosion.

**Mixing-**

The mix ratio is 2:1 by volume, 2 parts Part A and 1 part Part B. Any steel reinforcement and formwork should be prepared, cut to size and shape and made ready for assembly before mixing commences.

Care should be taken to ensure that Epilox Epoxy Binder is thoroughly mixed. The entire contents of the hardener (Part B) tin should be poured into the base (Part A) tin and the two materials thoroughly mixed using a suitable slow-speed drill and high shear mixing paddle.

Mix for 2 minutes until a fully uniform colour is obtained; the sides of the tins should be scraped, mixing should continue for a further 2 minutes. **DO NOT OVER MIX AS THIS MAY INCORPORATE AIR BUBBLES.**

To facilitate mixing and application at temperatures below 10°C, the separate components should be warmed in hot water up to a maximum temperature of 25°C before beginning to mix.

If heated to 25°C, the subsequently mixed material will have a pot life that will be reduced to 25-30 minutes. Alternatively, the material should be stored in an environment controlled to 20°C and only removed immediately before use. **ONLY MIX MATERIAL THAT CAN BE USED WITHIN THE SETTING TIME.**

**Application-**

Aftek Epilox Epoxy Binder should be applied as soon as the mixing process has been completed. It should be brushed, rolled or spray applied to the prepared surfaces. The new concrete or screed should be applied to the coated substrate within 60-90 minutes at 20°C or when the surface is tacky, but not wet.

As soon as the Aftek Epilox Epoxy Binder is applied, any required steel reinforcement and/ or formwork should be erected and fixed securely in place.

Ensure the Aftek Epilox Epoxy Binder is tacky prior to application of repair mortar. If the application of the Aftek Epilox Epoxy Binder has cured and is touch dry, **DO NOT** apply cementitious repair mortar. Re-apply with a second coat of Aftek Epilox Epoxy Binder to be the first coat and allow reaching a tacky consistency before applying the cementitious repair mortar.

Where Aftek Epilox Epoxy Binder is to be used for grouting bolts or starter bars on horizontal surfaces, the hole diameter must be approximately 1.5 times the diameter of the actual bolt to be grouted. Set the bolt in the clean, contamination free hole and pour the mixed Aftek Epilox Epoxy Binder from one side only, ensure that this is conducted in a continuous operation so as to avoid air entrapment and to ensure complete coverage around the bolt or starter bar.

Aftek Epilox Epoxy Binder may also be used as a Aftek Epoxy Binder to obtain a specific consistency when mixed with Aftek F6 and F4 Fillers – see table below.

**Priming-**

When used as a primer, Epilox Binder is applied by brush or roller to the prepared substrate. Epilox Binder is normally applied at the rate of 5 - 7m<sup>2</sup> per litre in an even pattern over the substrate. Coverage will vary according to the porosity and texture of the substrate.

**COVERAGE**

1m<sup>2</sup>/ litre @ 1mm thickness (with addition of Epilox Fillers- refer to coverage tables.

**PERFORMANCE PROPERTIES-**

STRENGTH		
Strength	Filled	Unfilled
Tensile Strength	14MPa	45MPa
Compressive Strength	70MPa	100MPa
Flexural Strength	24MPa	50MPa

CHEMICAL RESISTANCE *	
Chemical	Resistance
Citric Acid 100%	Excellent
Acetic Acid 5%	Excellent
Sodium Hydroxide 30%	Excellent
Diesel fuel/ petrol	Excellent
Sugar Solutions	Very Good
Tartaric Acid 100%	Very Good
Hydrocarbons	Very Good
Phosphoric Acid	Very Good

\* Resistant to spillage. Surface staining may result from exposure to some aggressive chemicals. All spills should be quickly removed and washed. Over exposure may result in surface degradation.

**IMPORTANT NOTES**

Epilox Epoxy Binder when mixed in large volumes, greater than 10 litres is highly likely to cure faster reducing the pot life of the mixed material in the tin.

**Low temperature working:** the minimum application temperature is 5°C. In temperatures below 10°C, the separate components should be heated in warm water (up to 25°C) or stored in a temperature controlled environment for 12 hours before use.

**High temperature working:** at ambient temperatures above 30°C, the material should be stored in the shade or in an air-conditioned environment for 12 hours before use.

DO NOT dilute Epoxy Binder with solvents as this will severely affect the ultimate performance of the product

Only mix as much Epilox Epoxy Binder that can be used within the Pot Life (20-25 minutes @ 25°C).

TYPICAL PROPERTIES	
Viscosity	300cps
Appearance	Part A: Clear flowable liquid. Part B: Clear Amber flowable liquid
Specific Gravity	1.14Kg/ Lt
Solid Content	100%
Flammability	Non Flammable (no solvent)
Chemical Resistance	Excellent (see chart)
Tensile Strength	45MPa
Heat Distortion Temp	90°C approx.
Pot Life	25-35 min (unfilled) @ 25°C
Compressive Strength	120MPa unfilled
Water Absorption*	<0.20% (10 days @ 25°C)
Flexural Strength	50MPa approx.
Tensile Bond Strength	15MPa approx.
Modulus of elasticity	Approx. 11 x 10 <sup>3</sup> MPa
Service Temp	-20°C to + 70°C
Hardness	>80 shore D

\* Tested to ASTM D570

**PERFORMANCE PROPERTIES**

The following may be used as guide for the quantity of Epilox F4 Course Filler required to obtain a specific consistency when Patchfix Epoxy Binder is used as a binder.

Litres of Epilox Epoxy Binder (Litre)	1	1	1	1	1	1
Approx. weight of Epilox F4 Filler (Kg)	1.5	2.5	3	4.5	6.0	7.5
Approx. yield (Litres) Resin & Fillers (Litres)	2	2.5	3	4	5	6
Mixed Consistency	Very Fluid Grout	Fluid Grout	Pourable Grout	Stiff Paste	Trowellable Mortar	Dry Mortar Trowellable
Pot Life 20°C (Min approx.)	35-45	45-50	55-65	55-65	55-64	65-70
Tensile Strength @ 7 days MPa approx.	16	14	13	11	11	10
Flexural Strength @ 7 days MPa approx.	28	26	26	25	24	21
Compressive Strength @ 7 days MPa approx.	80	75	70	70	70	65

The following may be used as a guide for the quantity of Epilox F6 Fine Filler required to obtain a specific consistency when Epilox Epoxy Binder is used as a binder.

Litres of Epilox Epoxy Binder (Litre)	1	1	1	1	1	1
Approx. weight of Epilox F6 Filler (Kg)	1.7	3.5	5.0	7.0	8.5	10
Approx. yield (Litres) Resin & Fillers (Litres)	2	3	4	5	6	7
Mixed Consistency	Very Fluid Grout	Fluid Grout	Pourable Grout	Stiff Paste	Trowellable Mortar	Dry Mortar Trowellable
Pot Life 20°C (Min approx.)	35-45	40-50	55-65	55-65	55-64	65-70
Tensile Strength @ 7 days MPa approx.	16	14	13	11	10	10
Flexural Strength @ 7 days MPa approx.	28	26	26	25	25	20
Compressive Strength @ 7 days MPa approx.	80	75	75	70	70	60

**PACKAGING**

Aftek Patchfix Epoxy Binder is available in 1.5, 6, 30 and 200 litre kits – all in Clear Amber colour.

1.5 litres- item no. 481015

6 litres- item no. 481025

30 litre kit- item no. 481020

200 litres- item no. 481032 Resin

200 litres- item no. 481036 Hardener

**STORAGE-SHELF LIFE**

Store between 10°C and 30°C away from direct sunlight. Shelf life is 12 months in original unopened container.

**CLEAN UP**

Clean up uncured material and equipment immediately after use using Aftek solvent. Do not use solvents on skin. Cured Aftek Epoxy Binder is difficult to remove via chemical means and mechanical means may be necessary.

**SAFETY PRECAUTIONS**

Refer to MSDS for more details on this product.

**FIRE**

This product is non-flammable and poses no fire risk.

**HEALTH AND SAFETY**

Avoid contact with skin. Protective gloves and clothing are recommended when mixing or using this product. Please refer to full MSDS (material safety data sheet) for this product, which is available from Aftek upon request or through [www.aftek.com.au](http://www.aftek.com.au)

**PRECAUTIONS**

See the material safety data sheets for additional information.

- Epilox Binder when mixed in large volumes greater than 5 litres unfilled will cure at a very fast rate with reduced pot life
- Epilox Binder (unfilled) will exotherm at large volumes
- Epilox Binder is non UV stable and will yellow if exposed to sunlight

**TECHNICAL SUPPORT**

Aftek manufactures a comprehensive range of high quality and performance construction products. In addition, ITLS offers technical support and on-site advice to specifiers, end users and contractors.

Please contact your ITLS-Aftek sales representative or Head Office for this service.

The information and any recommendations relating to the application and end-use of all ITLS products are provided in good faith based on ITLS's knowledge and experience of the products. In applications, the differences in materials, and variances of substrates and actual site conditions can vary such that no warranty in respect of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be taken as inferred either from this information, or from any written recommendations, or from any other advice offered by ITLS. The proprietary rights of third parties must be observed. All orders are accepted subject to our sale terms and conditions. All users should always refer to the most recent and up to date issue of the Technical Data Sheet for the product concerned, which is available on request. It is recommended that products should always be properly stored, handled and applied under tested and recommended conditions. PLEASE CONSULT OUR TECHNICAL DEPARTMENT FOR FURTHER INFORMATION.